IN THE SPECIFICATION:

Please replace the paragraph beginning on page 15 line 1 with the following new paragraph:

In the first and second aspect of the present invention, the device may comprise an electrically insulating and thermally conductive layer adjacent to the bottom surface of the membrane. The electrically insulating and thermally conductive layer is used to help remove a large part of the heat that might otherwise be trapped within the membrane when the power device is operating. The layer may be of any suitable material such as for example polycrystalline diamond, amorphous diamond, boron nitride, aluminium oxide, etc. The material is preferably formed by blanket deposition as a layer by sputtering or chemical vapor deposition or any other suitable technique. The layer may entirely fill the space under the membrane or may be provided as a thin layer under the membrane and which follows the side walls and the bottom surface of any remaining substrate. The layer is preferably in thermal contact with a heat sink.

Please replace the paragraph beginning on page 19, line 27 with the following new paragraph:

The method may comprise applying an electrically insulating and thermally conductive layer adjacent the bottom surface of the membrane. The electrically insulating and thermally conductive layer may be applied by a (preferably blanket) deposition process.

Please replace the paragraph beginning on page 20, line 1 with the following new paragraph:

Alternatively the method may comprise applying an electrically and thermally conductive layer which acts as an electrode (terminal) adjacent the bottom surface of the membrane. The layer may be applied by a blanket deposition.

Please replace the paragraph beginning on page 26, line 5 with the following new paragraph:

Referring now to Figure 7, considering that all of the terminals are placed on the top surface 15 in this example, a layer 45 that is electrically insulating but which has a relatively

high thermal conductivity may be placed adjacent the bottom surface 17 of the membrane 16 to help remove a large fraction of the heat which otherwise may be trapped inside the membrane 16 while the power device is operational. In the preferred embodiment, this layer 45 is formed after the single back-side etching of the semiconductor substrate 11 is carried out and may be in the form of a blanket deposition of a dielectric material with high thermal conductivity. Such material may be for example based on diamond. Other materials, such as boron nitride, aluminium nitride, and aluminium oxide, can be used. As shown in Figure 8, the insulating layer 45 may fill the entire gap in the substrate 11 left by the membrane formation. In either case, a heat sink 46 may be in thermal contact with the insulating layer 45 to extract heat.

Please replace the paragraph beginning on page 49, line 5 with the following new paragraph:

The example of Figure 41b differs from the example of Figure 41a in that the highly doped n-type drain layer 122 is formed by masked or blanket back-side deposition after the membrane 16 is formed. The drain terminal 103 is applied to the membrane bottom surface 17 after the membrane 16 is formed and the n-type drain layer 122 is introduced in the membrane 16 from the back-side of the device.